

Package ‘fs’

March 5, 2020

Title Cross-Platform File System Operations Based on 'libuv'

Version 1.3.2

Description A cross-platform interface to file system operations, built on top of the 'libuv' C library.

Depends R (>= 3.1)

License GPL-3

Encoding UTF-8

LazyData true

ByteCompile true

LinkingTo Rcpp

Imports methods, Rcpp

SystemRequirements GNU make

RoxygenNote 7.0.2

URL <http://fs.r-lib.org>, <https://github.com/r-lib/fs>

BugReports <https://github.com/r-lib/fs/issues>

Copyright file COPYRIGHTS

Suggests testthat, covr, pillar (>= 1.0.0), tibble (>= 1.1.0), crayon, rmarkdown, knitr, withr, spelling

VignetteBuilder knitr

Language en-US

NeedsCompilation yes

Author Jim Hester [aut, cre],
Hadley Wickham [aut],
libuv project contributors [cph] (libuv library),
Joyent, Inc. and other Node contributors [cph] (libuv library),
RStudio [cph, fnd]

Maintainer Jim Hester <james.f.hester@gmail.com>

Repository CRAN

Date/Publication 2020-03-05 14:30:02 UTC

R topics documented:

copy	2
create	4
delete	5
dir_ls	6
dir_tree	8
file_access	8
file_chmod	9
file_chown	10
file_info	11
file_move	12
file_show	13
file_temp	13
file_touch	14
fs_bytes	15
fs_path	16
fs_perms	16
id	18
is_absolute_path	18
is_file	19
link_path	20
path	20
path_expand	21
path_file	22
path_filter	23
path_math	24
path_package	26
path_sanitize	27
path_tidy	28
Index	29

copy

Copy files, directories or links

Description

`file_copy()` copies files.

`link_copy()` creates a new link pointing to the same location as the previous link.

`dir_copy()` copies the directory recursively at the new location.

Usage

```
file_copy(path, new_path, overwrite = FALSE)
```

```
dir_copy(path, new_path, overwrite = FALSE)
```

```
link_copy(path, new_path, overwrite = FALSE)
```

Arguments

path	A character vector of one or more paths.
new_path	A character vector of paths to the new locations.
overwrite	Overwrite files if they exist. If this is FALSE and the file exists an error will be thrown.

Details

The behavior of `dir_copy()` differs slightly than that of `file.copy()` when `overwrite = TRUE`. The directory will always be copied to `new_path`, even if the name differs from the basename of `path`.

Value

The new path (invisibly).

Examples

```
file_create("foo")
file_copy("foo", "bar")
try(file_copy("foo", "bar"))
file_copy("foo", "bar", overwrite = TRUE)
file_delete(c("foo", "bar"))

dir_create("foo")
# Create a directory and put a few files in it
files <- file_create(c("foo/bar", "foo/baz"))
file_exists(files)

# Copy the directory
dir_copy("foo", "foo2")
file_exists(path("foo2", path_file(files)))

# Create a link to the directory
link_create(path_abs("foo"), "loo")
link_path("loo")
link_copy("loo", "loo2")
link_path("loo2")

# Cleanup
dir_delete(c("foo", "foo2"))
```

```
link_delete(c("loo", "loo2"))
```

create *Create files, directories, or links*

Description

The functions `file_create()` and `dir_create()` ensure that path exists; if it already exists it will be left unchanged. That means that compared to `file.create()`, `file_create()` will not truncate an existing file, and compared to `dir.create()`, `dir_create()` will silently ignore existing directories.

Usage

```
file_create(path, ..., mode = "u=rw,go=r")
dir_create(path, ..., mode = "u=rwx,go=rx", recurse = TRUE, recursive)
link_create(path, new_path, symbolic = TRUE)
```

Arguments

<code>path</code>	A character vector of one or more paths.
<code>...</code>	Additional arguments passed to <code>path()</code>
<code>mode</code>	If file/directory is created, what mode should it have? Links do not have mode; they inherit the mode of the file they link to.
<code>recurse</code>	should intermediate directories be created if they do not exist?
<code>recursive</code>	(Deprecated) If TRUE recurse fully.
<code>new_path</code>	The path where the link should be created.
<code>symbolic</code>	Boolean value determining if the link should be a symbolic (the default) or hard link.

Value

The path to the created object (invisibly).

Examples

```
file_create("foo")
is_file("foo")
# dir_create applied to the same path will fail
try(dir_create("foo"))

dir_create("bar")
```

```
is_dir("bar")
# file_create applied to the same path will fail
try(file_create("bar"))

# Cleanup
file_delete("foo")
dir_delete("bar")
```

delete

Delete files, directories, or links

Description

`file_delete()` and `link_delete()` delete file and links. Compared to `file.remove` they always fail if they cannot delete the object rather than changing return value or signalling a warning. If any inputs are directories, they are passed to `dir_delete()`, so `file_delete()` can therefore be used to delete any filesystem object.

`dir_delete()` will first delete the contents of the directory, then remove the directory. Compared to `unlink` it will always throw an error if the directory cannot be deleted rather than being silent or signalling a warning.

Usage

```
file_delete(path)
```

```
dir_delete(path)
```

```
link_delete(path)
```

Arguments

path A character vector of one or more paths.

Value

The deleted paths (invisibly).

Examples

```
# create a directory, with some files and a link to it
dir_create("dir")
files <- file_create(path("dir", letters[1:5]))
link <- link_create(path_abs("dir"), "link")

# All files created
dir_exists("dir")
file_exists(files)
```

```

link_exists("link")
file_exists(link_path("link"))

# Delete a file
file_delete(files[1])
file_exists(files[1])

# Delete the directory (which deletes the files as well)
dir_delete("dir")
file_exists(files)
dir_exists("dir")

# The link still exists, but what it points to does not.
link_exists("link")
dir_exists(link_path("link"))

# Delete the link
link_delete("link")
link_exists("link")

```

dir_ls

List files

Description

dir_ls() is equivalent to the ls command. It returns filenames as a named fs_path character vector. The names are equivalent to the values, which is useful for passing onto functions like `purrr::map_dfr()`.

dir_info() is equivalent to ls -l and a shortcut for file_info(dir_ls()).

dir_map() applies a function fun() to each entry in the path and returns the result in a list.

dir_walk() calls fun for its side-effect and returns the input path.

Usage

```

dir_ls(
  path = ".",
  all = FALSE,
  recurse = FALSE,
  type = "any",
  glob = NULL,
  regexp = NULL,
  invert = FALSE,
  fail = TRUE,
  ...,
  recursive
)

```

```

dir_map(
  path = ".",
  fun,
  all = FALSE,
  recurse = FALSE,
  type = "any",
  fail = TRUE
)

dir_walk(
  path = ".",
  fun,
  all = FALSE,
  recurse = FALSE,
  type = "any",
  fail = TRUE
)

dir_info(
  path = ".",
  all = FALSE,
  recurse = FALSE,
  type = "any",
  regexp = NULL,
  glob = NULL,
  fail = TRUE,
  ...
)

```

Arguments

path	A character vector of one or more paths.
all	If TRUE hidden files are also returned.
recurse	If TRUE recurse fully, if a positive number the number of levels to recurse.
type	File type(s) to return, one or more of "any", "file", "directory", "symlink", "FIFO", "socket", "character_device" or "block_device".
glob	A wildcard aka globbing pattern (e.g. *.csv) passed on to grep() to filter paths.
regexp	A regular expression (e.g. [.]csv\$) passed on to grep() to filter paths.
invert	If TRUE return files which do <i>not</i> match
fail	Should the call fail (the default) or warn if a file cannot be accessed.
...	Additional arguments passed to grep .
recursive	(Deprecated) If TRUE recurse fully.
fun	A function, taking one parameter, the current path entry.

Examples

```

dir_ls(R.home("share"), type = "directory")

# Create a shorter link
link_create(system.file(package = "base"), "base")

dir_ls("base", recurse = TRUE, glob = "*.R")

dir_map("base", identity)

dir_walk("base", str)

dir_info("base")

# Cleanup
link_delete("base")

```

dir_tree	<i>Print contents of directories in a tree-like format</i>
----------	--

Description

Print contents of directories in a tree-like format

Usage

```
dir_tree(path = ".", recurse = TRUE, ...)
```

Arguments

path	A path to print the tree from
recurse	If TRUE recurse fully, if a positive number the number of levels to recurse.
...	Additional arguments passed to dir_ls .

file_access	<i>Query for existence and access permissions</i>
-------------	---

Description

file_exists(path) is a shortcut for file_access(x, "exists"); dir_exists(path) and link_exists(path) are similar but also check that the path is a directory or link, respectively.

Usage

```
file_access(path, mode = "exists")
```

```
file_exists(path)
```

```
dir_exists(path)
```

```
link_exists(path)
```

Arguments

path A character vector of one or more paths.

mode A character vector containing one or more of 'exists', 'read', 'write', 'execute'.

Details

Cross-compatibility warning: There is no executable bit on Windows. Checking a file for mode 'execute' on Windows, e.g. `file_access(x, "execute")` will always return TRUE.

Value

A logical vector, with names corresponding to the input path.

Examples

```
file_access("/")
file_access("/", "read")
file_access("/", "write")

file_exists("WOMBATS")
```

file_chmod	<i>Change file permissions</i>
------------	--------------------------------

Description

Change file permissions

Usage

```
file_chmod(path, mode)
```

Arguments

path A character vector of one or more paths.

mode A character representation of the mode, in either hexadecimal or symbolic format.

Details

Cross-compatibility warning: File permissions differ on Windows from POSIX systems. Windows does not use an executable bit, so attempting to change this will have no effect. Windows also does not have user groups, so only the user permissions (u) are relevant.

Examples

```
file_create("foo", mode = "000")
file_chmod("foo", "777")
file_info("foo")$permissions

file_chmod("foo", "u-x")
file_info("foo")$permissions

file_chmod("foo", "a-wrx")
file_info("foo")$permissions

file_chmod("foo", "u+wr")
file_info("foo")$permissions

# It is also vectorized
files <- c("foo", file_create("bar", mode = "000"))
file_chmod(files, "a+rwX")
file_info(files)$permissions

file_chmod(files, c("644", "600"))
file_info(files)$permissions
```

file_chown

Change owner or group of a file

Description

Change owner or group of a file

Usage

```
file_chown(path, user_id = NULL, group_id = NULL)
```

Arguments

path	A character vector of one or more paths.
user_id	The user id of the new owner, specified as a numeric ID or name. The R process must be privileged to change this.
group_id	The group id of the new owner, specified as a numeric ID or name.

file_info	<i>Query file metadata</i>
-----------	----------------------------

Description

Compared to `[file.info]` the full results of a `stat(2)` system call are returned and some columns are returned as S3 classes to make manipulation more natural. On systems which do not support all metadata (such as Windows) default values are used.

Usage

```
file_info(path, fail = TRUE, follow = FALSE)
```

```
file_size(path, fail = TRUE)
```

Arguments

path	A character vector of one or more paths.
fail	Should the call fail (the default) or warn if a file cannot be accessed.
follow	If TRUE, symbolic links will be followed (recursively) and the results will be that of the final file rather than the link.

Value

A data.frame with metadata for each file. Columns returned are as follows.

path	The input path, as a <code>fs_path()</code> character vector.
type	The file type, as a factor of file types.
size	The file size, as a <code>fs_bytes()</code> numeric vector.
permissions	The file permissions, as a <code>fs_perms()</code> integer vector.
modification_time	The time of last data modification, as a <code>POSIXct</code> datetime.
user	The file owner name - as a character vector.
group	The file group name - as a character vector.
device_id	The file device id - as a numeric vector.
hard_links	The number of hard links to the file - as a numeric vector.
special_device_id	The special device id of the file - as a numeric vector.
inode	The inode of the file - as a numeric vector.
block_size	The optimal block for the file - as a numeric vector.
blocks	The number of blocks allocated for the file - as a numeric vector.
flags	The user defined flags for the file - as an integer vector.
generation	The generation number for the file - as a numeric vector.

access_time	The time of last access - as a POSIXct datetime.
change_time	The time of last file status change - as a POSIXct datetime.
birth_time	The time when the inode was created - as a POSIXct datetime.

See Also

[dir_info\(\)](#) to display file information for files in a given directory.

Examples

```
write.csv(mtcars, "mtcars.csv")
file_info("mtcars.csv")

# Files in the working directory modified more than 20 days ago
files <- file_info(dir_ls())
files$path[difftime(Sys.time(), files$modification_time, units = "days") > 20]

# Cleanup
file_delete("mtcars.csv")
```

file_move	<i>Move or rename files</i>
-----------	-----------------------------

Description

Compared to [file.rename](#) `file_move()` always fails if it is unable to move a file, rather than signaling a Warning and returning an error code.

Usage

```
file_move(path, new_path)
```

Arguments

path	A character vector of one or more paths.
new_path	New file path. If <code>new_path</code> is existing directory, the file will be moved into that directory; otherwise it will be moved/renamed to the full path. Should either be the same length as <code>path</code> , or a single directory.

Value

The new path (invisibly).

Examples

```
file_create("foo")
file_move("foo", "bar")
file_exists(c("foo", "bar"))
file_delete("bar")
```

file_show	<i>Open files or directories</i>
-----------	----------------------------------

Description

Open files or directories

Usage

```
file_show(path = ".", browser = getOption("browser"))
```

Arguments

path	A character vector of one or more paths.
browser	a non-empty character string giving the name of the program to be used as the HTML browser. It should be in the PATH, or a full path specified. Alternatively, an R function to be called to invoke the browser. Under Windows NULL is also allowed (and is the default), and implies that the file association mechanism will be used.

Value

The directories that were opened (invisibly).

file_temp	<i>Create names for temporary files</i>
-----------	---

Description

file_temp() returns the name which can be used as a temporary file.

Usage

```
file_temp(pattern = "file", tmp_dir = tempdir(), ext = "")
```

```
file_temp_push(path)
```

```
file_temp_pop()
```

```
path_temp(...)
```

Arguments

pattern	A character vector with the non-random portion of the name.
tmp_dir	The directory the file will be created in.
ext	The file extension of the temporary file.
path	A character vector of one or more paths.
...	Additional paths appended to the temporary directory by path().

Details

file_temp_push() can be used to supply deterministic entries in the temporary file stack. This can be useful for reproducibility in like example documentation and vignettes.

file_temp_pop() can be used to explicitly remove an entry from the internal stack, however generally this is done instead by calling file_temp().

path_temp() constructs a path within the session temporary directory.

Examples

```
path_temp()
path_temp("does-not-exist")

file_temp()
file_temp(ext = "png")
file_temp("image", ext = "png")

# You can make the temp file paths deterministic
file_temp_push(letters)
file_temp()
file_temp()

# Or explicitly remove values
while (!is.null(file_temp_pop())) next
file_temp_pop()
```

file_touch

Change file access and modification times

Description

Unlike the touch POSIX utility this does not create the file if it does not exist. Use [file_create\(\)](#) to do this if needed.

Usage

```
file_touch(path, access_time = Sys.time(), modification_time = access_time)
```

Arguments

path A character vector of one or more paths.
 access_time, modification_time
 The times to set, inputs will be coerced to [POSIXct](#) objects.

Examples

```
file_create("foo")
file_touch("foo", "2018-01-01")
file_info("foo")[c("access_time", "modification_time", "change_time", "birth_time")]
```

 fs_bytes

Human readable file sizes

Description

Construct, manipulate and display vectors of file sizes. These are numeric vectors, so you can compare them numerically, but they can also be compared to human readable values such as '10MB'.

Usage

```
as_fs_bytes(x)

fs_bytes(x)
```

Arguments

x A numeric or character vector. Character representations can use shorthand sizes (see examples).

Examples

```
fs_bytes("1")
fs_bytes("1K")
fs_bytes("1Kb")
fs_bytes("1Kib")
fs_bytes("1MB")

fs_bytes("1KB") < "1MB"

sum(fs_bytes(c("1MB", "5MB", "500KB")))
```

fs_path	<i>File paths</i>
---------	-------------------

Description

Tidy file paths, character vectors which are coloured by file type on capable terminals.

Colouring can be customized by setting the LS_COLORS environment variable, the format is the same as that read by GNU ls / dircolors.

Colouring of file paths can be disabled by setting LS_COLORS to an empty string e.g. Sys.setenv(LS_COLORS = "").

Usage

```
as_fs_path(x)
```

```
fs_path(x)
```

Arguments

x vector to be coerced to a fs_path object.

See Also

<https://geoff.greer.fm/lscolors>, https://github.com/trapd00r/LS_COLORS, <https://github.com/seebi/dircolors-solarized> for some example colour settings.

fs_perms	<i>Create, modify and view file permissions</i>
----------	---

Description

fs_perms() objects help one create and modify file permissions easily. They support both numeric input, octal and symbolic character representations. Compared to `octmode` they support symbolic representations and display the mode the same format as ls on POSIX systems.

Usage

```
as_fs_perms(x, ...)
```

```
fs_perms(x, ...)
```

Arguments

x An object which is to be coerced to a fs_perms object. Can be a number or octal character representation, including symbolic representations.

... Additional arguments passed to methods.

Details

On POSIX systems the permissions are displayed as a 9 character string with three sets of three characters. Each set corresponds to the permissions for the user, the group and other (or default) users.

If the first character of each set is a "r", the file is readable for those users, if a "-", it is not readable.

If the second character of each set is a "w", the file is writable for those users, if a "-", it is not writable.

The third character is more complex, and is the first of the following characters which apply.

- 'S' If the character is part of the owner permissions and the file is not executable or the directory is not searchable by the owner, and the set-user-id bit is set.
- 'S' If the character is part of the group permissions and the file is not executable or the directory is not searchable by the group, and the set-group-id bit is set.
- 'T' If the character is part of the other permissions and the file is not executable or the directory is not searchable by others, and the 'sticky' (S_ISVTX) bit is set.
- 's' If the character is part of the owner permissions and the file is executable or the directory searchable by the owner, and the set-user-id bit is set.
- 's' If the character is part of the group permissions and the file is executable or the directory searchable by the group, and the set-group-id bit is set.
- 't' If the character is part of the other permissions and the file is executable or the directory searchable by others, and the "sticky" (S_ISVTX) bit is set.
- 'x' The file is executable or the directory is searchable.
- '-' If none of the above apply. Most commonly the third character is either 'x' or -.

On Windows the permissions are displayed as a 3 character string where the third character is only - or x.

Examples

```
# Integer and numeric
fs_perms(420L)
fs_perms(c(511, 420))

# Octal
fs_perms("777")
fs_perms(c("777", "644"))

# Symbolic
fs_perms("a+rw")
fs_perms(c("a+rw", "u+rw,go+r"))

# Use the `&` and `|` operators to check for certain permissions
(fs_perms("777") & "u+r") == "u+r"
```

id	<i>Lookup Users and Groups on a system</i>
----	--

Description

These functions use the GETPWENT(3) and GETGENT(3) system calls to query users and groups respectively.

Usage

```
group_ids()
```

```
user_ids()
```

Value

They return their results in a `data.frame`. On windows both functions return an empty `data.frame` because windows does not have user or group ids.

Examples

```
# list first 6 groups
head(group_ids())
```

```
# list first 6 users
head(user_ids())
```

is_absolute_path	<i>Test if a path is an absolute path</i>
------------------	---

Description

Test if a path is an absolute path

Usage

```
is_absolute_path(path)
```

Arguments

path A character vector of one or more paths.

Examples

```
is_absolute_path("/foo")
is_absolute_path("C:\\foo")
is_absolute_path("\\\\myserver\\foo\\bar")
```

```
is_absolute_path("foo/bar")
```

is_file	<i>Functions to test for file types</i>
---------	---

Description

Functions to test for file types

Usage

```
is_file(path, follow = TRUE)
is_dir(path, follow = TRUE)
is_link(path)
is_file_empty(path, follow = TRUE)
```

Arguments

path	A character vector of one or more paths.
follow	If TRUE, symbolic links will be followed (recursively) and the results will be that of the final file rather than the link.

Value

A named logical vector, where the names give the paths. If the given object does not exist, NA is returned.

See Also

[file_exists\(\)](#), [dir_exists\(\)](#) and [link_exists\(\)](#) if you want to ensure that the path also exists.

Examples

```
dir_create("d")
file_create("d/file.txt")
dir_create("d/dir")
link_create(path(path_abs("d"), "file.txt"), "d/link")

paths <- dir_ls("d")
is_file(paths)
is_dir(paths)
is_link(paths)

# Cleanup
dir_delete("d")
```

link_path	<i>Read the value of a symbolic link</i>
-----------	--

Description

Read the value of a symbolic link

Usage

```
link_path(path)
```

Arguments

path A character vector of one or more paths.

Value

A tidy path to the object the link points to.

Examples

```
file_create("foo")
link_create(path_abs("foo"), "bar")
link_path("bar")

# Cleanup
file_delete(c("foo", "bar"))
```

path	<i>Construct path to a file or directory</i>
------	--

Description

path() constructs a relative path, path_wd() constructs an absolute path from the current working directory.

Usage

```
path(..., ext = "")
path_wd(..., ext = "")
```

Arguments

- ... character vectors, if any values are NA, the result will also be NA. The paths follow the recycling rules used in the tibble package, namely that only length 1 arguments are recycled.
- ext An optional extension to append to the generated path.

See Also

[path_home\(\)](#), [path_package\(\)](#) for functions to construct paths relative to the home and package directories respectively.

Examples

```
path("foo", "bar", "baz", ext = "zip")
path("foo", letters[1:3], ext = "txt")
```

path_expand

Finding the User Home Directory

Description

- `path_expand()` performs tilde expansion on a path, replacing instances of `~` or `~user` with the user's home directory.
- `path_home()` constructs a path within the expanded users home directory, calling it with *no* arguments can be useful to verify what fs considers the home directory.
- `path_expand_r()` and `path_home_r()` are equivalents which always use R's definition of the home directory.

Usage

```
path_expand(path)
path_expand_r(path)
path_home(...)
path_home_r(...)
```

Arguments

- path A character vector of one or more paths.
- ... Additional paths appended to the home directory by [path\(\)](#).

Details

`path_expand()` differs from `base::path.expand()` in the interpretation of the home directory of Windows. In particular `path_expand()` uses the path set in the `USERPROFILE` environment variable and, if unset, then uses `HOMEDRIVE/HOMEPAH`.

In contrast `base::path.expand()` first checks for `R_USER` then `HOME`, which in the default configuration of R on Windows are both set to the user's document directory, e.g. `C:\Users\username\Documents`. `base::path.expand()` also does not support `~otheruser` syntax on Windows, whereas `path_expand()` does support this syntax on all systems.

This definition makes fs more consistent with the definition of home directory used on Windows in other languages, such as `python` and `rust`. This is also more compatible with external tools such as `git` and `ssh`, both of which put user-level files in `USERPROFILE` by default. It also allows you to write portable paths, such as `~/Desktop` that points to the Desktop location on Windows, macOS and (most) Linux systems.

Users can set the `R_FS_HOME` environment variable to override the definitions on any platform.

See Also

[R for Windows FAQ - 2.14](#) for behavior of `base::path.expand()`.

Examples

```
# Expand a path
path_expand("~/bin")

# You can use `path_home()` without arguments to see what is being used as
# the home directory.
path_home()
path_home("R")

# This will likely differ from the above on Windows
path_home_r()
```

path_file

Manipulate file paths

Description

`path_file()` returns the filename portion of the path, `path_dir()` returns the directory portion. `path_ext()` returns the last extension (if any) for a path. `path_ext_remove()` removes the last extension and returns the rest of the path. `path_ext_set()` replaces the extension with a new extension. If there is no existing extension the new extension is appended.

Usage

```
path_file(path)

path_dir(path)

path_ext(path)

path_ext_remove(path)

path_ext_set(path, ext)

path_ext(path) <- value
```

Arguments

path	A character vector of one or more paths.
ext, value	The new file extension.

Details

Note because these are not full file paths they return regular character vectors, not `fs_path()` objects.

See Also

[base::basename\(\)](#), [base::dirname\(\)](#)

Examples

```
path_file("dir/file.zip")

path_dir("dir/file.zip")

path_ext("dir/file.zip")

path_ext("file.tar.gz")

path_ext_remove("file.tar.gz")

# Only one level of extension is removed
path_ext_set(path_ext_remove("file.tar.gz"), "zip")
```

path_filter

Filter paths

Description

Filter paths

Usage

```
path_filter(path, glob = NULL, regexp = NULL, invert = FALSE, ...)
```

Arguments

path	A character vector of one or more paths.
glob	A wildcard aka globbing pattern (e.g. *.csv) passed on to <code>grep()</code> to filter paths.
regexp	A regular expression (e.g. [.]csv\$) passed on to <code>grep()</code> to filter paths.
invert	If TRUE return files which do <i>not</i> match
...	Additional arguments passed to <code>grep</code> .

Examples

```
path_filter(c("foo", "boo", "bar"), glob = "*oo")
path_filter(c("foo", "boo", "bar"), glob = "*oo", invert = TRUE)

path_filter(c("foo", "boo", "bar"), regexp = "b.r")
```

 path_math

Path computations

Description

All functions apart from `path_real()` are purely path computations, so the files in question do not need to exist on the filesystem.

Usage

```
path_real(path)

path_split(path)

path_join(parts)

path_abs(path, start = ".")

path_norm(path)

path_rel(path, start = ".")

path_common(path)

path_has_parent(path, parent)
```


Arguments

path	A character vector of one or more paths.
parts	A character vector or a list of character vectors, corresponding to split paths.
start	A starting directory to compute the path relative to.
parent	The parent path.

Value

The new path(s) in an `fs_path` object, which is a character vector that also has class `fs_path`. Except `path_split()`, which returns a list of character vectors of path components.

Functions

- `path_real`: returns the canonical path, eliminating any symbolic links and the special references `~`, `~user`, `.`, and `..`, i.e. it calls `path_expand()` (literally) and `path_norm()` (effectively).
- `path_split`: splits paths into parts.
- `path_join`: joins parts together. The inverse of `path_split()`. See `path()` to concatenate vectorized strings into a path.
- `path_abs`: returns a normalized, absolute version of a path.
- `path_norm`: eliminates `.` references and rationalizes up-level `..` references, so `A/.B` and `A/foo/..B` both become `A/B`, but `../B` is not changed. If one of the paths is a symbolic link, this may change the meaning of the path, so consider using `path_real()` instead.
- `path_rel`: computes the path relative to the start path, which can be either an absolute or relative path.
- `path_common`: finds the common parts of two (or more) paths.
- `path_has_parent`: determine if a path has a given parent.

See Also

[path_expand\(\)](#) for expansion of user's home directory.

Examples

```
dir_create("a")
file_create("a/b")
link_create(path_abs("a"), "c")

# Realize the path
path_real("c/b")

# Split a path
parts <- path_split("a/b")
parts

# Join it together
```

```

path_join(parts)

# Find the absolute path
path_abs("../")

# Normalize a path
path_norm("a/../b\\c/.")

# Compute a relative path
path_rel("/foo/abc", "/foo/bar/baz")

# Find the common path between multiple paths
path_common(c("/foo/bar/baz", "/foo/bar/abc", "/foo/xyz/123"))

# Cleanup
dir_delete("a")
link_delete("c")

```

path_package	<i>Construct a path to a location within an installed or development package</i>
--------------	--

Description

path_package differs from `system.file()` in that it always returns an error if the package does not exist. It also returns a different error if the file within the package does not exist.

Usage

```
path_package(package, ...)
```

Arguments

package	Name of the package to in which to search
...	Additional paths appended to the package path by <code>path()</code> .

Details

path_package() also automatically works with packages loaded with devtools even if the path_package() call comes from a different package.

Examples

```

path_package("base")
path_package("stats")
path_package("base", "INDEX")
path_package("splines", "help", "AnIndex")

```

path_sanitize	<i>Sanitize a filename by removing directory paths and invalid characters</i>
---------------	---

Description

path_sanitize() removes the following:

- **Control characters**
- **Reserved characters**
- Unix reserved filenames (. and ..)
- Trailing periods and spaces (invalid on Windows)
- Windows reserved filenames (CON, PRN, AUX, NUL, COM1, COM2, COM3, COM4, COM5, COM6, COM7, COM8, COM9, LPT1, LPT2, LPT3, LPT4, LPT5, LPT6, LPT7, LPT8, and LPT9) The resulting string is then truncated to **255 bytes in length**

Usage

```
path_sanitize(filename, replacement = "")
```

Arguments

filename	A character vector to be sanitized.
replacement	A character vector used to replace invalid characters.

See Also

<https://www.npmjs.com/package/sanitize-filename>, upon which this function is based.

Examples

```
# potentially unsafe string
str <- "~/.\u0001ssh/authorized_keys"
path_sanitize(str)

path_sanitize("../")
```

`path_tidy`*Tidy paths*

Description

untidy paths are all different, tidy paths are all the same. Tidy paths always use / to delimit directories, never have multiple / or trailing / and have coloured output based on the file type.

Usage

```
path_tidy(path)
```

Arguments

`path` A character vector of one or more paths.

Value

An `fs_path` object, which is a character vector that also has class `fs_path`

Index

`as_fs_bytes (fs_bytes)`, 15
`as_fs_path (fs_path)`, 16
`as_fs_perms (fs_perms)`, 16

`base::basename()`, 23
`base::dirname()`, 23
`base::path.expand()`, 22

`copy`, 2
`create`, 4

`delete`, 5
`dir.create()`, 4
`dir_copy (copy)`, 2
`dir_create (create)`, 4
`dir_delete (delete)`, 5
`dir_exists (file_access)`, 8
`dir_exists()`, 19
`dir_info (dir_ls)`, 6
`dir_info()`, 12
`dir_ls`, 6, 8
`dir_map (dir_ls)`, 6
`dir_tree`, 8
`dir_walk (dir_ls)`, 6

`file.create()`, 4
`file.remove`, 5
`file.rename`, 12
`file_access`, 8
`file_chmod`, 9
`file_chown`, 10
`file_copy (copy)`, 2
`file_create (create)`, 4
`file_create()`, 14
`file_delete (delete)`, 5
`file_exists (file_access)`, 8
`file_exists()`, 19
`file_info`, 11
`file_move`, 12
`file_show`, 13

`file_size (file_info)`, 11
`file_temp`, 13
`file_temp_pop (file_temp)`, 13
`file_temp_push (file_temp)`, 13
`file_touch`, 14
`fs_bytes`, 15
`fs_bytes()`, 11
`fs_path`, 16
`fs_path()`, 11
`fs_perms`, 16
`fs_perms()`, 11

`grep`, 7, 24
`grep()`, 7, 24
`group_ids (id)`, 18

`id`, 18
`is_absolute_path`, 18
`is_dir (is_file)`, 19
`is_file`, 19
`is_file_empty (is_file)`, 19
`is_link (is_file)`, 19

`link_copy (copy)`, 2
`link_create (create)`, 4
`link_delete (delete)`, 5
`link_exists (file_access)`, 8
`link_exists()`, 19
`link_path`, 20

`octmode`, 16

`path`, 20
`path()`, 4, 21, 25, 26
`path_abs (path_math)`, 24
`path_common (path_math)`, 24
`path_dir (path_file)`, 22
`path_expand`, 21
`path_expand()`, 25
`path_expand_r (path_expand)`, 21
`path_ext (path_file)`, 22

`path_ext<-` (`path_file`), 22
`path_ext_remove` (`path_file`), 22
`path_ext_set` (`path_file`), 22
`path_file`, 22
`path_filter`, 23
`path_has_parent` (`path_math`), 24
`path_home` (`path_expand`), 21
`path_home()`, 21
`path_home_r` (`path_expand`), 21
`path_join` (`path_math`), 24
`path_math`, 24
`path_norm` (`path_math`), 24
`path_package`, 26
`path_package()`, 21
`path_real` (`path_math`), 24
`path_rel` (`path_math`), 24
`path_sanitiz`, 27
`path_split` (`path_math`), 24
`path_split()`, 25
`path_temp` (`file_temp`), 13
`path_tidy`, 28
`path_wd` (`path`), 20
POSIXct, 11, 12, 15
`purrr::map_dfr()`, 6

`system.file()`, 26

`unlink`, 5
`user_ids` (`id`), 18